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Reprinted from THE MEDICAL RECORD, JUL - 3 1900, August 25, 1887.

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NEW YORK

TROW'S PRINTING AND BOOKBINDING CO.,

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1888.

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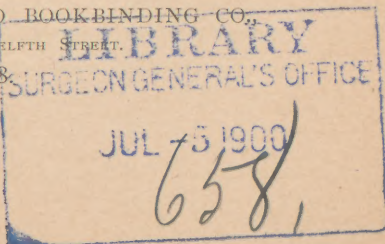
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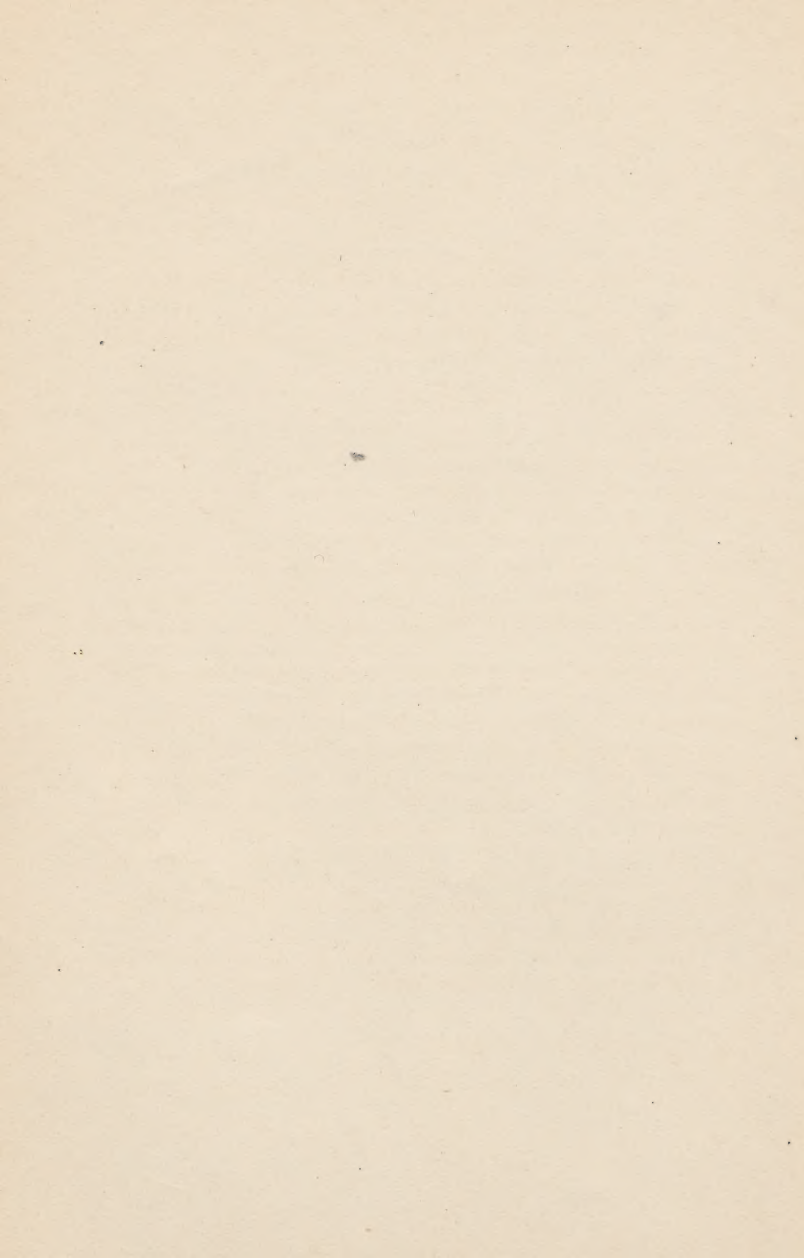
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THE FREQUENT DEPENDENCE OF PERSISTENT AND SO-CALLED CONGESTIVE HEADACHES UPON ABNORMAL CONDITIONS OF THE NASAL PASSAGES.¹

THERE is perhaps no single affection that causes so large an amount of human suffering, and which is regarded so lightly, as that known by the generic term, headache.

There is also no affection that has so many different types, nor one which is caused by such great variety of bodily conditions. It not only attends nervous affections, but is a frequent complication of nearly every other form of disease.

A headache is, in every instance, a warning of some disease or derangement that should be sought out and corrected. Dr. Day very truly says: "The subject of headache is of manifest importance, because it claims so many sufferers and is surrounded by so many difficulties; the pathology is obscure, the diagnosis perplexing, the remedies uncertain. Headache is a disorder of the most frequency, and yet there is none which more taxes the experience and scientific knowledge of the physician, or requires closer observation in elucidating its nature and removing its obscurity."²

The connection between abnormal conditions of the nasal passages and certain forms of headache was recog-

¹ Read before the Medical Society of the State of New York, February 9th, 1888.

² Headaches: Their Nature, Causes, and Treatment. Am. Ed., 1883, p. 11.

nized a long time before we had any definite knowledge concerning diseases of the nose. These headaches were, however, only those observed to be associated with, or caused by, an engorged condition of the nasal passages, usually that attending a cold in the head, and were therefore termed "catarrhal headaches."

Headaches caused by chronic abnormal conditions of the nasal passages, in which the nasal derangement played a less conspicuous part, were sometimes attributed to other causes, and the nasal disease was entirely overlooked or unsuspected. In case of entire failure to detect a cause, the headache is often termed "nervous" or "congestive," or by that most comforting of terms, "idiopathic."

The physical relations of the nose to the other portions of the human system are very important; for in diseases of this organ not only are the well-known offices which it performs interfered with, but derangements are produced in other organs and parts. Such derangements may be the effect not simply of cutting off nasal respiration, but of the irritation that is reflected from the nose to other parts through its abundant nervous connections.

An impetus was given to the study of nasal neuroses when it was shown that nearly all the phenomena attending hay-fever were reflected irritations from the nose; and also that many other neuroses, such as megrim, facial spasm, choreic symptoms, epileptiform seizure, sneezing cough, laryngeal spasm and asthma, were frequently excited by disease in the nasal chambers.

With this array of symptomatic effects of nasal irritation, together with the proximity of the nasal chambers, and their communicating cavities to the brain, we would naturally expect to find morbid impulses quite as often reflected to the head as to any other region.

For the purpose of illustrating the clinical character of headaches of nasal origin, I have selected from the many instances that have come to my observation the following cases:

Mr. A. K——, fifty years of age, had been subject to persistent headaches for fourteen years. At first, the headache was slight. He would awaken with a headache in the morning, which would pass away during the early part of the forenoon, after exercising in the open air. This symptom steadily increased in severity and would continue longer during the day, until for two years previous to the time I first saw him, his headache was persistent and continuous during the entire twenty-four hours. The pain was confined to the upper portion of the frontal region. There was no pain over the region of the frontal sinuses. The pain was a dull ache, like a sensation of pressure, with a feeling of fullness throughout the head. When I saw him, the pain had become so severe as to be almost unbearable. His ideas were confused and his memory had begun to fail him, so that he was apprehensive of softening of the brain, or some other severe disease in his head. A short time before his headache commenced he began to be troubled with what he termed a "catarrhal" difficulty, with more or less stoppage of the nostrils—particularly the left one—and also with considerable discharge. On lying down his nostrils became stopped and he was obliged to breathe through his mouth during sleep. His throat would become parched and dry, and there would be left a bad taste in his mouth in the morning. His headaches were considered to be a form of congestive headache, due to what is commonly termed "biliousness." He was treated by a variety of physicians—regulars, irregulars, and defectives—with no permanent benefit. A great deal of quinine was given him by those supposing it to be of malarial origin. The only medicines that seemed to give him any relief whatever were active cathartics, which seemed to confirm the congestive and bilious theory. Accordingly, for the two years previous to the time I saw him he took a cathartic every day, such as pills of some sort, salts, senna, castor oil, rhubarb, cream of tartar, etc. A Turk-

ish bath would also give him complete relief during the time that he was in the bath.

On examination of the nasal passages I found a bony ridge projecting from the left side of the septum and pressing firmly into the left middle turbinated body. There was also some hypertrophy of both the inferior and middle turbinated bodies on that side. On the right side there was some general thickening of the mucous membrane, but the nostril was comparatively free.

The bony ridge I removed with a nasal saw, and applied the galvanic cautery to the turbinated hypertrophy. The result was complete and almost immediate relief from the headaches. For some time his whole scalp had been so sensitive that he could not endure the slightest pressure, but this sensitiveness of the scalp disappeared almost entirely with the headache. He is, however, still sensitive to draughts of cold air, but by keeping his head warm with a skull-cap or other closely fitting cap, he is exempt from every vestige of headache. Since he ceased treatment two years ago, he has taken no medicine whatever, has enjoyed perfect health, and now says he feels better than he has felt at any time in fifteen years.

Mr. E. R——, aged twenty-seven, cigar-maker by trade. For a year and a half he had experienced an obstruction in the nose, which seemed to follow a severe cold in the head. This was followed by more or less ringing in the ears, profuse discharge from the nose, and soon after by a severe headache or pain confined to the occipital region on the left side. He also had more or less intermittent pain in the left side of the chest. This condition continued, and the pain grew steadily worse until he had to give up all work and became seriously alarmed as to his condition. He was subject to frequent colds in the head, his nostrils were most of the time stopped, and he was obliged to breathe through his mouth. He was also subject to frequent attacks of sore throat.

On examining his condition a bony ridge was found

projecting from the left side of the septum, prodding into the lower turbinated body on that side, very similar to the case just described.

There was also marked hypertrophy of the middle turbinated bone, which pressed firmly against the septum above this region. On the left side there was marked inferior turbinated hypertrophy, which almost completely occluded the nostril. On removal of these abnormal conditions the pain disappeared, and there has been no return of it since. The general condition, which had become much reduced, at once rapidly improved. He went back to his work and has had no trouble since.

Mrs. J. K——, aged thirty-one, had had nasal catarrh and obstructed nostrils for eight years, and during each summer hay-fever very severely. Four years previous to the time when I saw her, she began to have frequent and severe headaches affecting the whole head, but more intense over the supra-orbital and frontal regions. She had a profuse discharge from the nose. She also had tinnitus aurium, but her hearing was not impaired. She became unable to use her eyes to read or sew, on account of a headache which was immediately brought on. In general health she was weak and anæmic.

On examination of her nasal passage I found both inferior and middle turbinated hypertrophy, on both sides, obstructing the nostrils anteriorly and posteriorly. Most of this projection was removed with a snare, and the remainder with the galvanic cautery. After some subsequent treatment the nasal stenosis was completely removed and nasal respiration became entirely free. The headaches disappeared, as did also the sensitive condition of the eyes, so that she could read and sew, and use her eyes without the slightest discomfort or headache. Her general health improved. She began to gain in flesh and strength, and during the five years which have since elapsed she has remained entirely well, with no return of the headache or the hay-fever.

Miss K. C——, aged twenty-six. For two years she had experienced a great deal of obstruction in the nostrils, with a sensation of pressure about the bridge of the nose, sensitiveness of the eyes and lachrymation, pain about the head in the temporal and frontal regions, but particularly back of the neck. She also had a profuse discharge from the nose, and frequent hoarseness.

On examination the middle and superior turbinated bones on both sides were found greatly enlarged and pressing firmly against the septum. There was very little other trouble found in the nostrils. The inferior turbinated bodies were not hypertrophied. Pressure over the inner wall of the orbit on either side would greatly increase the pain on that side of the head. The treatment consisted in removing the hypertrophied portions of the middle turbinated bodies which pressed against the septum. The headaches were at once relieved, as was also the sensitive condition of the eyes and the lachrymation.

Mr. L. H——, aged fifty. He had experienced trouble in the throat since he could remember. During the past four years he had had much obstruction of the nostrils, with profuse discharge, and also a severe but dull pain and a sensation of pressure about the bridge of the nose, with a dull headache extending through the frontal and temporal regions.

On examination of his nose, on both sides there was found inferior posterior turbinated hypertrophy. On the left side, the middle turbinated body was found enlarged and pressing against the septum, while on the right side of the septum, along the superior border, there was a thick ridge of tissue of a doughy consistency, which was pressing against the superior turbinated body on that side. The removal of these abnormal conditions in the nose resulted in complete relief from the headache and of the noticeable symptoms of the nasal difficulty.

Mrs. J. R——, aged forty-three. Her throat was sensitive, and she had been subject to frequent colds in the head for several years. During the past three years she

had been subject to headaches, slight at first, but gradually increasing in severity. They were confined mainly to the frontal regions, but at times severe pains, which she considered neuralgic, would extend throughout the whole region of the scalp. She had also more or less stoppage of the nose, and was obliged to sleep with her mouth open. In the morning her mouth would be dry and parched. She also suffered from a great deal of irritation about the throat and was frequently hoarse.

On examination of the nose there was found, on the right side of the septum, an exostosis projecting against the middle and superior turbinated bodies, which were very sensitive to the slightest touch of the probe. There was also some inferior posterior turbinated hypertrophy on both sides. There was a pad of hypertrophied tissue along the upper border of the septum, on the left side, pressing against the middle turbinated bone. The turbinated hypertrophies were removed, the hypertrophies of the septum, and the bony projection.. With the necessary subsequent treatment the nasal difficulty was entirely relieved and the headaches wholly disappeared.

Mrs. D. G——, aged forty-two. For several years she has had more or less obstruction of, and discharge from, the nostrils, attended with very severe headaches. She was subject to frequent attacks of cold in the head, which would at once bring on a headache. These attacks were considered to be of a congestive nature. The headaches at first were slight, but afterward they became much more severe and persistent. Sometimes a severe attack would be attended with nausea and vomiting. Occasionally these attacks would supervene during some change in the weather, and without the evidence of a cold. She was very sensitive to the inhalation of dust or damp air, which would bring on a headache. Her general health was much impaired. Examination of her nose revealed a firm hypertrophy or enlargement of the middle turbinated body, which pressed against the septum. There was also some inferior posterior turbinated hypertrophy on both

sides, and a pad of thick, soft tissue on the right side of the septum, near the upper portion, pressing against the middle turbinated body on that side. These abnormal conditions of the nose were removed. The headaches and attacks of nausea speedily disappeared, and, with the administration of tonics of bark and iron, she soon became restored to a condition of vigorous health.

As to the etiology of headaches, it may be said that those which have their exciting cause in the nose are reflex in character. This is a self-evident fact, for the reason that the manifestation of pain is at a point more or less remote from its exciting cause in the nose.

The exceptions to this statement are where the pain occurring directly over the frontal sinuses is due to disease of these sinuses; or to the accumulation of secretions or of mucous discharges in these sinuses caused by obstructive swelling at the opening of these sinuses, or to hypertrophic rhinitis; or to the direct extension of disease from the nasal cavity to the meninges and brain. Such extension, however, very rarely occurs.

It may occur, nevertheless, when the cribriform plate and the upper portion of the lateral masses of the ethmoid bone are quite extensively diseased and undergoing necrosis; or it may take place through the communication of the lymphatics of the nasal mucous membrane with the supra-orbital and sub-arachnoid spaces. It has been demonstrated that by injecting fluids into the latter spaces with sufficient force, such fluids can be made to pass through the lymphatic canals to the surface of the mucous membrane. Therefore, if these nasal lymphatics become obstructed, it is not impossible that more or less pressure might be made on the cerebro-spinal fluid.

The exciting cause of nasal headache is an irritation of the terminal nerve-filaments in the nasal chambers, which excites an undue activity in the communicating ganglion, and from which an irritation is reflected to the terminal filaments of other communicating nerves. This undue

activity of the sympathetic ganglia also causes a dilatation of the smaller vessels and the capillaries, and a greatly increased vascularity of the part takes place, which, being associated with the head pain, is recognized as a congestive headache. Sometimes, when the irritation is great, the congestion will be intense. The vessels of the scalp will be full and bounding. There is often more or less hyperæsthesia of the scalp, with a sensation of heat at the spot where the pain is most intense, or a sensation as if a nail were driven into the scalp, a "clavus" which the patient will sometimes instinctively indicate by a gesture. It is in this manner that other well-recognized headaches, due to irritation reflected from distant parts and organs, are caused; as, for instance, those due to uterine irritation, and most commonly expressed by a vertex-pain; those excited by derangements of the stomach, causing irritation of the gastric plexus of the sympathetic, and reflected to the frontal region; and those due to eye-strain, and manifested by pain in the region of the orbit and temple.

In the last case mentioned the irritation is caused by the effort of the ocular muscles to adjust themselves so as to overcome a defective accommodation, and as soon as the irritation is removed by ceasing to use the eye, or by the use of properly adjusted glasses, the consequent headache ceases. The frequent occurrence of the dependence of severe headaches on defective accommodation of the eye is shown by the number of reports of such cases that have been, during the past few years, scattered through our medical literature. Many cases of eye-trouble due to disease in the nose are also reported.

In the nose, the irritation is occasioned by some abnormal condition which brings together parts that normally should be separate, and produces more or less pressure between them.

In no case of headache, either temporary or persistent, excited by nasal irritation, have I failed to find the irritation to be due to such pressure in some portion of the

nasal chambers. I should except polypoid or other growths in the nose, which will produce pressure, and frequently severe headaches, but in such cases the parts are forcibly separated. This pressure may be constant or only during the period of temporary engorgement of the soft parts, which brings them forcibly together or against the septum. There may be an exostosis of a turbinated bone prodding the septum, or a firm hypertrophy of a turbinated body pressing against it; or the septum may be much deflected, or there may be a bony ridge or sharp spur projecting from it, prodding a turbinated body.

When one wall of a nasal passage comes in contact with its opposite wall, sooner or later the resulting irritation causes a sensitiveness and thickening of the tissues.

It is not uncommon that a sensation of fullness is felt at the base of the nose and about its bridge, associated with more or less head-pain, due to an enlarged middle turbinated body wedged in tightly against the septum.

I have also not infrequently found a pad, or oval mass, of tissue located on the septum, near its upper border, opposite to and pressing against the middle or superior turbinated body. These are almost always very sensitive to irritation, and in persons subject to hay-fever they are extremely so.

The character of the pain varies from a dull, heavy ache, like that from undue pressure, to a sharp pain, like that characteristic of neuralgia. The pain also may be intermittent and more or less transient, recurring at frequent and, it may be, regular intervals, or it may be persistent, or nearly continuous.

In the latter case it is, as a rule, due to a constant pressure between parts that are found to be bony or composed of more or less firm tissue; while in cases of transient pains the pressure is between soft tissues, and on the subsidence of the engorgement, the parts become separated and the pain disappears. In other words, when there is constant pain there is a correspondingly constant

pressure, and in temporary attacks of pain the pressure is correspondingly temporary.

Certain atmospheric conditions will excite headache. It is usually when there is a low temperature and low barometer, with the air surcharged with moisture—a condition that causes these diseased nasal tissues to become engorged and also distended by the absorption of water from the atmosphere.

Various conditions of the body have an influence on the nose and cause reflected headaches. Gastric and hepatic disturbances and a plethoric condition of the system will not only produce a fullness of the cerebral vessels by sympathetic irritation, but also a distention of the cavernous sinuses of the nose, thus producing intra-nasal pressure.

The connection between the nose and stomach is often experienced by those who indulge in wine dinners, and tax their stomachs beyond their normal capacity with *pâté de foie gras* and other like substances of difficult digestion; for it is rarely that they escape a cold in the head and a matutinal headache. Persons who have organic derangements in the nasal passages can rarely indulge to excess in eating, drinking, or nervous excitement without exciting a coryza and an associated headache.

It is to be noticed in those cases in which an engorged condition of the nasal passages is associated with a headache, that the pain is mainly located in the region where a pain is experienced by the same person when suffering from what he considers a purely catarrhal headache. In the latter case the relation between cause and effect is recognized by the individual, but in the former instance the pain is attributed to some other cause than that existing in the nose.

The location of the pains in the head has no constant relation to the disease nor to its seat in the nose, and it has no such relation to the distribution of the nerves or blood-

vessels. As I have pointed out in a previous paper,¹ an irritation reflected from the nose (or from any other part, as the case may be) is, like the electric current, reflected always in the direction of the least resistance. It may be reflected in one direction at one time, and in another at another time. Therefore, from the same region in the nose the pain may be reflected to the vertex, to the occiput, to the parietal, temporal, or frontal region ; or it may be spread out over the whole surface.

In some cases, as we would naturally expect, when the abnormal condition in the nose is confined to one side, we have a hemicrania on that side ; but this is not always true, as shown by some of the cases cited.

Notwithstanding the fact that the location of the pain in the head bears no constant relation to the location of the disease in the nose, it is observed that from certain portions of the nasal chamber pain is more often reflected to particular regions of the head than to other regions. Thus from the inferior turbinated body and lower portion of the septum the pain is most often reflected to the lower and posterior portion of the temporal, parietal, and occipital bones.² The pain reflected from the region of the middle turbinated bone is commonly referred to the temple, sometimes invading the whole region from the nose to the parietal eminence, and extending to the vertex; while pain reflected from the region of the superior turbinated bone is commonly felt in the frontal and supra-orbital region.

¹ Hay Fever : An analysis of forty-four cases treated by the writer, together with results of treatment, *New York Medical Journal*, 1887, vol. xlv., p. 225.

² Pain may be reflected from this region in other directions. A little more than a year ago a gentleman, aged forty, consulted me in regard to a naso-pharyngeal affection that troubled him very much. He also complained of a continuous dull pain in the upper portion of the left side of his chest, which greatly annoyed him, lest it were due to some disease of the lung. I examined the chest, but could not find the slightest evidence of disease there. In his left nostril there was a bony ridge projecting from the left side of the septum, near its lower border, and pressing into the left inferior turbinated body. On the removal of this bony ridge in the treatment of his nasal disorder the pain in his chest entirely disappeared, and there has been no return of it since.

Sometimes the pain will completely surround the eye, or be centred in the back of the eyeball.¹

In the diagnosis of headaches it is, therefore, evident that the dependence of persistent and so-called congestive headache upon abnormal conditions of the nasal passages is sufficiently frequent to call for a careful examination of these passages. In fact, in all cases where there is not an unquestionable relation of cause and effect between some other local or general disease and the headache, the nasal passages should be interrogated, even in the absence of urgent or distinctive symptoms of nasal disease.

It is too frequently the case that a well-pronounced nasal trouble is looked upon as nothing more nor less than an ordinary "nasal catarrh," while the headache that results from the disease in the nose is considered to be chronic neuralgia, as was the case with some of the patients whose cases I have reported, and the patient is teased for months, or years, until general debility, nervous prostration, or a neurosis is developed.

The necessity for an exhaustive study and careful examination of each particular organ that may, by any possibility, contain the exciting causes of any obscure neurotic affection, cannot be better illustrated than by the affection under consideration.

¹ Since this paper was read, a lady, aged fifty-five, was referred to me for treatment for a frequently recurring slight epistaxis from the left nostril, which I found to be caused by a small ulcer near the upper portion of the triangular cartilage. She also suffered from periodic headaches, occurring regularly every three weeks. The pain was confined to the right supra-orbital region, surrounded the right eye, and extended in behind the eye. During the two weeks previous to the time I saw her, she had also had divergent strabismus of this eye. Examination of the right nostril showed a rounded pad of hypertrophied tissue on the right side of the septum, near the upper border, opposite the superior turbinated body. It completely filled the passage at that place and pressed against the superior turbinated body. Pressure with a probe against this spot was referred to the supra-orbital region, while pressure against the superior turbinated bone caused a sharp pain in the back of the eyeball. On taking away this pad of hypertrophied tissue, pressure against the superior turbinated bone was removed, and there has been no headache or pain in the eyes since, and the strabismus has disappeared.

In case the headache is associated with pronounced nasal irritation, and there is an absence of any other pronounced cause, such as gastric disturbance, eye-strain, uterine and renal disease, rheumatic and lithæmic affections, or the effects of drugs, such as cocaine, and sometimes quinine, we have presumptive evidence that the headache originates in the nose.

Further evidence we should seek for, by carefully examining the nasal passages. If we see evidence of one or more of the various diseased conditions in the nose, already described, that may be the cause of headache, we should carefully explore the part with a probe. Usually the slightest touch of the probe against the offending part will provoke the characteristic head-pain. This connection is more pronounced during the exacerbation of the pain than during the period when the nasal irritation is in a condition of comparative quiescence.

Dr. Harrison Allen¹ has called attention to the effect of pressure upon the inner wall of the orbit; the pain that is caused thereby being due to the pressure of the anterior end of the middle turbinated bone against the septum. This pain, he observes, is reflected on a line from this point to the temple, and sometimes to the parietal eminence; while pressure of the entire bone against the septum will give rise to vertex-pain.

The treatment of headaches dependent on intra-nasal disease consists in the removal of the cause and the restoration of the nose to a normal condition. The conditions which we may have to deal with as possible causes of cephalic pain have been described under the head of etiology.

Dr. Glasgow,² of St. Louis, has called attention to the immediate relief given in the case of "congestive head-

¹ On the Headaches which are Associated Clinically with Chronic Nasal Catarrh. *Medical News*, 1886, vol. xlviii., p. 290. Phila.

² On Central Measures for the Relief of Congestive Headaches. *New York Medical Journal*, 1887, vol. xli., p. 260.

aches" by the abstraction of blood from the cavernous sinuses of the nose.

He observed that, during a congestive headache, the cavernous bodies of the nose were always in a condition of intense hyperæmia, and that on the abstraction of blood from these bodies the hyperæmia disappeared and the headache subsided. The abstraction of blood was accomplished by simply puncturing the cavernous bodies with a needle, and the flow of blood was proportionate to the amount of engorgement—from a drachm to several ounces. This also illustrates very clearly the dependence of headache on intra-nasal pressure.

The prognosis in regard to the result of the treatment and the relief of the pain will depend entirely on the accuracy of the diagnosis and the care with which the indications are carried out; for, when the cause is gone the symptoms will disappear—*sublata causa tollitur effectus*.

